Section 1: Introduction

In 1999, the Binational Executive Committee (BEC) passed a directive to accelerate the Lakewide Management Plan (LaMP) effort from the four-stage process outlined in the Great Lakes Water Quality Agreement (GLWQA) (IJC 1988). By accelerate, it was meant that there should be an emphasis on taking action and adopting a streamlined LaMP review and approval process. The LaMPs should treat problem identification, selection of remedial and regulatory measures and implementation as a concurrent, integrated process rather than a sequential one. The BEC recommended a LaMP be produced for each lake by April 2000, with updates every two years thereafter. This Lake Erie LaMP 2002 document represents the first update report. To fully appreciate the history of the Lake Erie LaMP process and to place this document in its proper, broad perspective, the reader should review the Lake Erie LaMP 2000 document. LaMP 2000 is available at a number of libraries and agencies in hard copy or CD, and can be accessed on the Lake Erie LaMP binational web site using the U.S. or Canadian urls: www.epa.gov/glnpo/lakeerie or www.on.ec.gc.ca/glimr/lakes/erie, respectively.

Photo: Steve Sauder

The GLWQA directs that the LaMPs take an ecosystem approach to assessing problem definition and implementing remedial actions. This concept is evident throughout the report, but particularly in the sections on ecosystem objectives and habitat strategy development. The environmental integrity of Lake Erie is dependent not only on various characteristics and stressors within the lake itself, but also on actions implemented throughout the Lake Erie watershed and beyond. Urban sprawl, shoreline development, climate change, the introduction of exotic species, the exploitation and destruction of natural lands and resources, the dominant agricultural and industrial practices within the lake basin, and long-range transport of contaminants from outside the basin all impact the health of Lake Erie. The LaMP provides a binational structure for addressing these environmental and natural resource issues, coordinating research, pooling resources, and making joint commitments to improve the environmental quality of the Lake Erie.

Due to the many chemical, physical, and biological complexities of the Lake Erie ecosystem, and the often-competing interests of diverse stakeholders, the Lake Erie LaMP necessarily takes an "adaptive management" approach. Ongoing research may bring new problems to light and resources constantly fluctuate as governmental and societal priorities shift. Following this approach, the Lake Erie LaMP 2002 document provides updated information on environmental conditions, presents a summary of the actions completed or underway to improve the lake, and discusses what additional plans or changes to ongoing management actions are needed.

The Lake Erie LaMP 2000 introduced the concept of ecosystem alternatives or future environmental states for the lake. The four ecosystem alternatives proposed represent different levels of recovery of natural system form and function. The extensive ecosystem alternative exercise that was carried out by the LaMP clearly identified what can be expected if particular management actions are implemented. Based on the results of that effort, the Lake Erie LaMP chose to support Ecosystem Alternative 2 as the one most consistent with sustainable development and providing multiple benefits to society. The LaMP 2002 report presents the potential ecosystem management objectives needed to achieve Ecosystem Alternative 2. These objectives are listed under the four main management categories of land use, nutrients, resource exploitation, and contaminants. Recognizing that management efforts to achieve Ecosystem Alternative 2 may require "trade-offs", it is important that consensus on the preferred alternative and associated management actions is reached among the diverse Lake Erie stakeholders.

The LaMP continues its efforts to locate and reduce or eliminate sources of pollutants particularly the Lake Erie LaMP designated critical pollutants of mercury and PCBs. The LaMP 2002 presents the results to date of a LaMP project to map the extent of sediment contamination in the Lake Erie basin for PCBs, mercury and dioxin. Tables listing the many critical pollutant reduction activities underway have been updated from those in the LaMP 2000 report. The beneficial use impairment assessment report for Degraded Wildlife Populations and Loss of Wildlife Habitat has been completed and the conclusions are highlighted in LaMP 2002. Updates on the fish beneficial use impairment assessment are presented as well.

The LaMP 2000 document presented an extensive list of habitat related projects underway or proposed in the Lake Erie basin. Rather than reporting out on the status of these projects and listing new ones, additional background research on preparing a habitat strategy indicated that the LaMP might better play an oversight role in creating general lakewide habitat objectives, supporting development of tools that might map areas of critical habitat, and coordinating with the many existing programs and efforts currently in place to improve habitat conditions in the Lake Erie basin. The success of habitat restoration and preservation will also depend on efforts to improve or protect the ecological processes that create and maintain habitats.

The Lake Erie LaMP is a program in which ongoing efforts, some of which may be conducted independently of the LaMP, can be strategically synthesized. Some of these actions include: the State of the Lakes Ecosystem Conference (SOLEC) efforts to develop Great Lakes indicators; the Lake Erie Millennium Plan initiative to identify, prioritize and pursue research needs; the efforts of Canadian and U.S. conservation agencies in controlling non-point sources and agricultural land use management; the land acquisition and preservation efforts of environmental groups such as The Nature Conservancy and the Nature Conservancy of Canada; the pollution prevention based activities of the Great Lakes Binational Toxics Strategy; implementation of the Remedial Action Plans in the 12 Lake Erie areas of concern; the fishery management plan of the Great Lakes Fishery Commission's Lake Erie Committee; implementation of wildlife management plans; and the efforts of the Lake Erie Binational Public Forum and others encouraging stakeholders across the basin to become involved in the decision-making process to determine the future status of Lake Erie. The LaMP remains mindful of emerging issues that may need to be adapted into the LaMP management scheme.

The Lake Erie LaMP focuses on measuring ecosystem health, teasing out the stressors responsible for impairments, and evaluating the effectiveness of existing programs in resolving the stress by continuing to monitor the ecosystem response. The role of the LaMP, as a management plan, is to define the management intervention needed to bring Lake Erie back to chemical, physical and biological integrity, and to further define agency commitments to those actions. Although Environment Canada (EC) and the U.S. Environmental Protection Agency (U.S. EPA) are the lead agencies for the LaMP, it continues to take an array of federal, local, state and provincial agencies and stakeholders to successfully implement the Lake Erie LaMP.